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Einschreiben / Telefax 089/2399-4465

Europäisches Patentamt
Erhardtstr. 27

80331 München

Datum: 2003.12.18
Unsere Zeichen: W1.1917PCT
Tel: 0931 909- 44 30
Fax: 0931 909- 47 89
Ihr Schreiben vom:
Ihre Zeichen: PCT/DE03/00672

Unsere Zeichen: W1.1917PCT/W-KL/03.2884/Sl/sb

Internationale Patentanmeldung PCT/DE03/00672
Anmelder: Koenig & Bauer Aktiengesellschaft et al.

In dieser Akte wurde bereits am 11.11.2003 der vorläufige internationale Prüfungsantrag gestellt.

Es wird beantragt, die beigefügten, nach Art. 19 PCT geänderten Ansprüche im Prüfungsverfahren zu berücksichtigen. Die Ansprüche wurden bereits per Telefax an WIPO übermittelt.

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Anlage
Schreiben an WIPO
Ansprüche, Austauschseiten 14 bis 19, Fassung 2003.12.18, 3fach

Translation of the pertinent portions of a Request by KBA, mailed 12/18/2003

International Patent Application PCT/DE03/00672

The request for the preliminary international examination report had already been filed on 11/11/2003.

It is requested to consider the enclosed claims, amended under Art. 19 PCT, in the examination procedure. The claims had already been sent by fax to WIPO.

Enclosures:

Claims, replacement pages 14 to 19, version of 12/18/2003, in triplicate

Claims

1. A device for aligning sheets (10, 11, 12) transversely in relation to the sheet running direction (L), wherein a holding device (05), which transports a sheet (10, 11, 12), is arranged to move the sheet (10, 11, 12) against a side mark (03), and at least two sheets (10, 11, 12) are arranged above each other in a scaled manner in the sheet running direction (L), wherein an effective holding surface extends in the sheet running direction (L) and is longer in the longitudinal direction (l05) than in the transverse direction (b05), characterized in that a ratio of a length (l05) of the effective holding surface in the longitudinal direction to a width (b05) of the effective holding surface in the transverse direction is greater than 3, and that the holding device (05) or suction roller (05) is arranged to act from above on the sheets (10, 11, 12).

2. A device for aligning sheets (10, 11, 12) transversely in relation to the sheet running direction (L), wherein a holding device (05), which transports a sheet (10, 11, 12), is arranged to move the sheet (10, 11, 12) against a side mark (03), and at least two sheets (10, 11, 12) are arranged above each other in a scaled manner in the sheet running direction (L), wherein an effective holding surface extends in the sheet running direction (L) and is longer in the longitudinal direction (l05) than in the transverse direction (b05), wherein three sheets (10, 11, 12) are simultaneously arranged in the area of the holding device (05), characterized in that the holding device (05) is embodied in the form of at least one suction roller (05).

3. The device in accordance with claim 2, characterized in that the three sheets (10, 11, 12) are arranged between two straight lines (23, 24), which delimit the length (105) of an effective holding surface of the holding device (05) and extend transversely in respect to the sheet running direction.

4. A device for aligning sheets (10, 11, 12) transversely in relation to the sheet running direction (L), wherein a suction

roller (05), which transports a sheet (10, 11, 12), is arranged to move the sheet (10, 11, 12) against a side mark (03), characterized in that the suction roller (05) is arranged to rotate revolvingly.

5. A device for aligning sheets (10, 11, 12) transversely in relation to the sheet running direction (L), wherein a suction roller (05), which transports a sheet (10, 11, 12), is arranged to move the sheet (10, 11, 12) against a side mark (03), characterized in that the suction roller (05) is arranged to perform 1/N rotations per sheet (10, 11, 12) to be aligned, wherein N = 2, 3, 4 ..., i.e. a whole number greater than 2.

6. The device in accordance with claim 5, characterized in that the suction roller (05) is arranged to perform half a rotation, i.e. make half a turn, per sheet (10, 11, 12) to be aligned.

7. A device for aligning sheets (10, 11, 12) transversely in relation to the sheet running direction (L), wherein a suction roller (05), which transports a sheet (10, 11, 12), is arranged to move the sheet (10, 11, 12) against a side mark (03), characterized in that the suction roller (05) has a plurality of segments with suction holes (06) in the circumferential direction, wherein each segment pulls up a different sheet (10, 11, 12) to be aligned by suction.

8. The device in accordance with claim 7, characterized in that the suction roller (05) has two segments with suction holes

(06) in the circumferential direction.

9. The device in accordance with claim 4, 5 or 7, characterized in that at least two sheets (10, 11, 12) are arranged one above the other in a scaled manner in the sheet running direction (L).

10. The device in accordance with claim 1, characterized in that the holding device (05) is embodied in the form of at least one suction roller (05).

11. The device in accordance with claim 2, 4, 5, 7 or 10, characterized in that the one longitudinal axis is arranged in the suction roller (05) approximately in the running direction (L) of the sheets (10, 11, 12).

12. The device in accordance with claim 2, 4, 5, 7 or 10, characterized in that the suction roller (05) is rotatingly arranged.

13. The device in accordance with claim 2, 4, 5 or 7, characterized in that the holding device (05) or suction roller (05) is arranged to act from above on the sheets (10, 11, 12).

14. The device in accordance with claim 1, 2, 4, 5 or 7, characterized in that at least one side mark (03), which delimits the transport path transversely in respect to the sheet running direction (L), is arranged in the area of the holding device (05) or suction roller (05).

15. The device in accordance with claim 2, 4, 5 or 7, characterized in that a ratio of the effective holding surface in the longitudinal direction (l05) to the effective holding surface in the transverse direction (b05) is greater than 3, preferably greater than 5.

16. The device in accordance with claim 1, 2, 4, 5 or 7, characterized in that the holding device (05) or the suction roller (05) is arranged at a feed table (01).

17. The device in accordance with claim 4, 5 or 7, characterized in that a rhythmically running suction roller (05)

has at least one segment with suction holes (06) and a segment without holes on its circumference, and that a stationary pipe (21) is located inside the rotatably seated suction roller (05) in such a way that, for picking up by suction and lateral transport of a sheet (10, 11, 12) lying underneath the suction roller (05) by means of a narrow slit over the length of the suction roller (05), only a narrow strip of all air holes is charged with suction air.

18. The device in accordance with claim 4 or 5, characterized in that the suction roller (05) has suction holes (06) all around, rotates rhythmically or freely, and the suction air is supplied in a clocked manner through a slit-like mouthpiece (22) within the suction roller (05) and is directed downward.

19. The device in accordance with claim 1 or 2, characterized in that a sheet guide is arranged for moving sheets (10, 11, 12), whose front and side edges have been aligned, axially with constant lateral offset.

20. The device in accordance with claim 17, characterized in that the suction air strip, which is located on the bottom, is active, narrow and long, of the suction roller (05) is arranged between the tolerance strip (13) of the incoming sheets (10, 11, 12) and the offset arranged lateral edge of the outgoing sheet (10, 11, 12).

21. The device in accordance with claim 4, 5 or 7, characterized in that up to three sheets (10, 11, 12) are

simultaneously located in the area of the suction roller (05) under it and parallel with it, even during active sheet pulling.

22. The device in accordance with claim 1 or 2, characterized in that, by means of appropriately clocked suction air, back and forth swinging suction strips or segments above and to the side of the sheet stream also accomplish the lateral pulling movement of the sheets with slippage against fixed side marks (03).

23. The device in accordance with claim 1, 2, 4, 5 and 7, characterized in that the scaled spacing of the sheets (10, 11, 12) on the feed table (01) is so close that, with an operating suction device pulling upward, a subsequent sheet (10, 11, 12) already moves underneath the picked-up sheet (10, 11, 12) in the direction toward the front marks (02).

24. The device in accordance with claim 4 or 7, characterized in that the suction roller (05) rotates at half turns and relates to two oppositely located suction air segments, and has a slightly smaller radius between them.

25. The device in accordance with claim 4, 5 or 7, characterized in that the suction roller (05) is driven by its own motor synchronously in respect to the downstream arranged machine.

26. The device in accordance with claim 4, 5 or 7, characterized in that the driving of the suction roller (05) by its own motor synchronously in respect to the downstream arranged machine takes place mechanically via a groove shaft, which rotates transversely underneath the feed table (01) and has bevel wheels, which can be shifted.

27. The device in accordance with claim 12, 18 or 19, characterized in that the drive mechanism permits a change in format transversely in respect to the sheet running direction (L).

28. The device in accordance with claim 4, 5 or 7, characterized in that driving of the suction roller (05), which

can be adjusted in accordance with the sheet format, takes place from a fixed drive point via a flexible shaft arranged above the feed table (01).

29. A method for aligning sheets (10, 11, 12) transversely to the sheet running direction (L), wherein a holding device (05)

transporting a sheet (10, 11, 12), is arranged for moving the sheet (10, 11, 12) against a side mark (03), and several sheets (10, 11, 12) are arranged in a scaled manner one above the other in the sheet running direction (L), including the following steps:

- a sheet (11), which has been grasped from above, is moved transversely in respect to the sheet running direction (L) by means of a holding device (05),

- at the same time, a leading end of a following sheet (12) is transported underneath the grasped sheet (10) in the area of the holding device (05),

- at least one end, which trails in the sheet running direction (L), of an already aligned sheet (10), which was moved transversely to the sheet running direction (L), is moved away from the side mark (03), again transversely to the sheet running direction (L).